With compliments

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UNIVERSITY OF FLORIDA
AGRICULTURAL EXPERIMENT STATION

AVOCADO SCAB

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A new and apparently undescribed disease has come to our attention within the last two years. Since it is sometimes referred to by nurserymen as Scab and bears a close relationship to citrus scab, this disease will be designated as Avocado Scab. It is chiefly a disease of the young foliage and stems of the avocado. It is found more abundant in the nursery where it severely affects the young seedling plants. It is also found on some of the budded varieties, but it is apparently less severe on them than on seedlings. The disease has also been found on young and old bearing grove trees. It affects the foliage and occasional attacks have been noted on the fruit. However, it is more common in the nurseries where it promises to be a serious trouble unless kept in check.

We have had this disease under study for the past few months and the cause has been discovered and identified. A survey to determine the distribution of the disease is being conducted by the State Plant Board. While our investigations are far from finished, it is thought advisable to report this advance information so that the avocado grower may recognize the trouble, and do what he can to combat or prevent it.

APPEARANCE

This scab forms definite spots or patches on the young tender leaves and shoots and severe attacks may cause leaves to curl or become distorted. The more mature leaf tissue is not affected, however old leaves will be found bearing spots that were formed when the tissue was young.

The spots are usually small, raised, circular to irregular, purplish-brown to dark, and may vary from one-sixteenth to one-eighth of an inch or more in diameter. They may be scattered over the surface or several may grow together, forming irregular patches. The spots penetrate the leaf tissue and are visible on both sides. They are usually more prominent on the upper surface of the leaf in which case the under surface of the spot will be slightly bulged and marked by a discolored area. The centers of the spots are composed of dead cells, more or less spongy in character and brownish in color. In the earlier stages the surface may show a whitish fuzzy growth, the fruiting parts of the fungus.

The surface of the older spots is darker in color and frequently covered with a dark, webby fungus growth. On the young shoots and twigs the spots appear more elevated, small, oval, dark purplish-brown to black and have comparatively smooth surfaces. This same type of spot has been observed on the fruits.

CAUSE

Avocado Scab is caused by a fungus that has been identified as *Cladosporium citri*, the same fungus that causes citrus scab. This fungus

has been repeatedly obtained from the diseased spots on avocado leaves and grown in pure cultures. Spores from these cultures applied to young healthy avocado foliage have consistently produced the typical spots of Avocado Scab.

A resemblance was soon detected between this fungus and the citrus scab organism and our studies and experiments thus far show that Avocado Scab and citrus scab can be caused by the same fungus. Spores of the same fungus that produced scab infection on avocado foliage have been applied to tender grapefruit foliage and typical citrus scab spots appeared on the leaves and stems thus treated. The same results were obtained by treating the young shoots of sour orange in the same manner. Thus far the citrus scab fungus isolated from infected citrus leaves has failed to produce the typical spots of Avocado Scab on young avocado leaves. However, a surface injury results on the leaves to which the spores are applied.

Apparently a strain of the citrus scab fungus, possibly from the grapefruit, has adapted itself to the avocado within the past few years.

This seems to bear out the habit of the fungus when we consider its history in Florida. A few years ago it was rarely found on the grapefruit, but today the grapefruit is seriously affected. We are beginning to find scab on the sweet orange, which has always been considered immune. Thus in a very few years the fungus has practically adapted itself to the more important members of the citrus family, becoming more severe each season. Its appearance on the avocado should be viewed with no little concern. Since the fungus seems capable of adapting itself to new host plants far removed from the citrus group, this habit may persist and there is the possibility of it becoming a serious pest on other important plants.

CONTROL

Only tentative control measures for Avocado Scab can be suggested at present. Spraying with bordeaux mixture for the disease in nurseries has given good results in some cases, in others less satisfactory. If the new growth can be protected while it is putting out and until it hardens, the disease may be largely prevented.

The spraying should begin when the foliage begins to put out and be continued until the leaves are nearly developed. The 4-4-50 bordeaux mixture may be used and applied at intervals of ten days to two weeks or often enough to keep the foliage well protected. The fungus develops more rapidly in cool weather, provided there is sufficient moisture. Shade and crowded conditions of the trees also seem to favor the development of the disease.

It is not advisable to locate the avocado nursery near any citrus grove, especially if citrus scab is present.

Every effort should be made to prevent the disease getting into groves or nurseries that are now free from it.

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